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Full-Session Auction For Video Ads

Tuna Toksoz

Thomas Price

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FULL-SESSION AUCTION FOR VIDEO ADS

ABSTRACT

A video monetization system and method are disclosed to run an auction to maximize the revenue from a sequence of multiple video ads, while minimizing the impact on the user's watch time. The system uses two predictive models, implemented with a machine learning algorithm that also takes into account user behavior/history. The method uses whole-commercial session features like the number of ads shown, the length of each ad, and the sequence of ads for selecting optimal commercial breaks to display to a user. Online video platforms may use full-session auction to optimize the entire sequence of video ads that they show within commercial breaks, in order to maximize revenue effectively.

BACKGROUND

Online streaming video services, like traditional television, generally inject commercial breaks into content. An auction is often run to select the highest-bidder video ad to show in each available slot. Some online video services provide skip functionality on ads. However, existing ads systems of online media are not adapted to optimize multiple ads. Optimization of video ads is needed for effective monetization of longer form content, which often relies on the additional revenue that comes from monetization with several sequences of ads interrupting the content at various commercial breaks. The optimization problem becomes important since an ads system requires flexibility on how many video ads to show in a sequence, and the length of ad to show in each spot. Thus there is a need for a better method to optimize multiple video ads to maximize revenue while minimizing the user annoyance that can cause users to stop watching

DESCRIPTION

This disclosure presents a video monetization system and a method that runs an auction to maximize the revenue from a sequence of multiple video ads, while minimizing

the impact on the user's watch time. The system chooses the optimal commercial breaks to show to a user, where a commercial break includes a specific sequence of video ads. The system depicted in FIG. 1 uses two predictive models, implemented with a machine learning algorithm that also takes into account user behavior/history. The method uses whole-commercial-session features like the number of ads shown, the length of each ad, and the sequence of ads for selecting optimal video ad commercials.

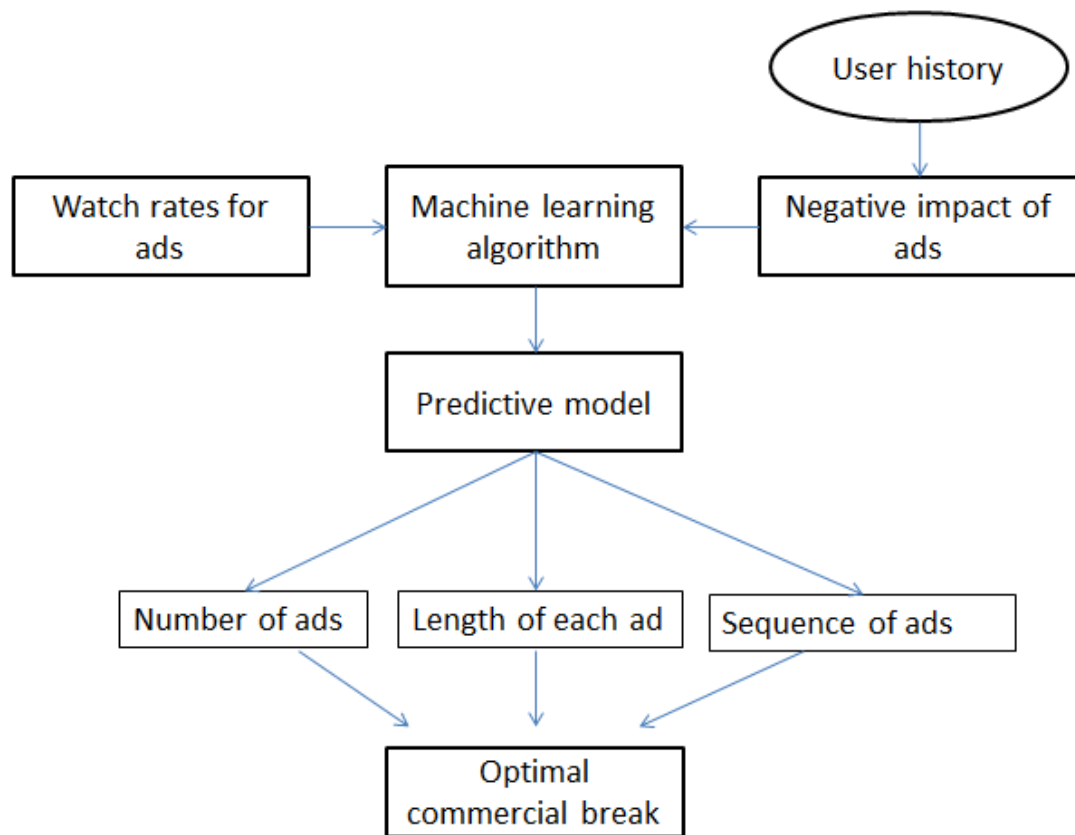


FIG. 1: System for full-session auction for video ads

The first model predicts watch rates for the ads. The ad that is not watched signifies that the ad was skipped or failed to register some viewability metric that is indicative of whether users are really watching the ad. Thus an ad that is watched more would rate higher. The second model predicts the negative impact of ads by showing the impact of each potential commercial break on the user's overall watch time of the video platform. For

example, the model may correlate the number of ad breaks in the videos that the user watched, and translates this into future opportunity to show video ad commercials.

The system may learn from the predictive models that a certain type of user may tolerate only very brief commercial breaks before abandoning the platform. The system may therefore decide to show only very short commercial breaks to maximize the long term value of the user to the platform. The method may or may not be implemented in a system that allows users to skip commercial breaks, perhaps for a fee. The system might also learn that a particular ad or class of ad often causes users to skip, and that it is therefore revenue optimal to place this ad near the end of the commercial break.

Online media services may use this system as they transition from monetizing short videos with single ads, to long-form content. If controls are provided to users to skip commercial breaks, as they can currently skip individual pre roll ads, the system can optimize ad delivery and revenue. Other video platforms may use this type of auction to optimize the entire sequence of video ads that they show within commercial breaks, in order to maximize revenue effectively.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information or history (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of a user cannot be determined. Thus, the

user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.